Risk Communication in Occupational Health and Safety

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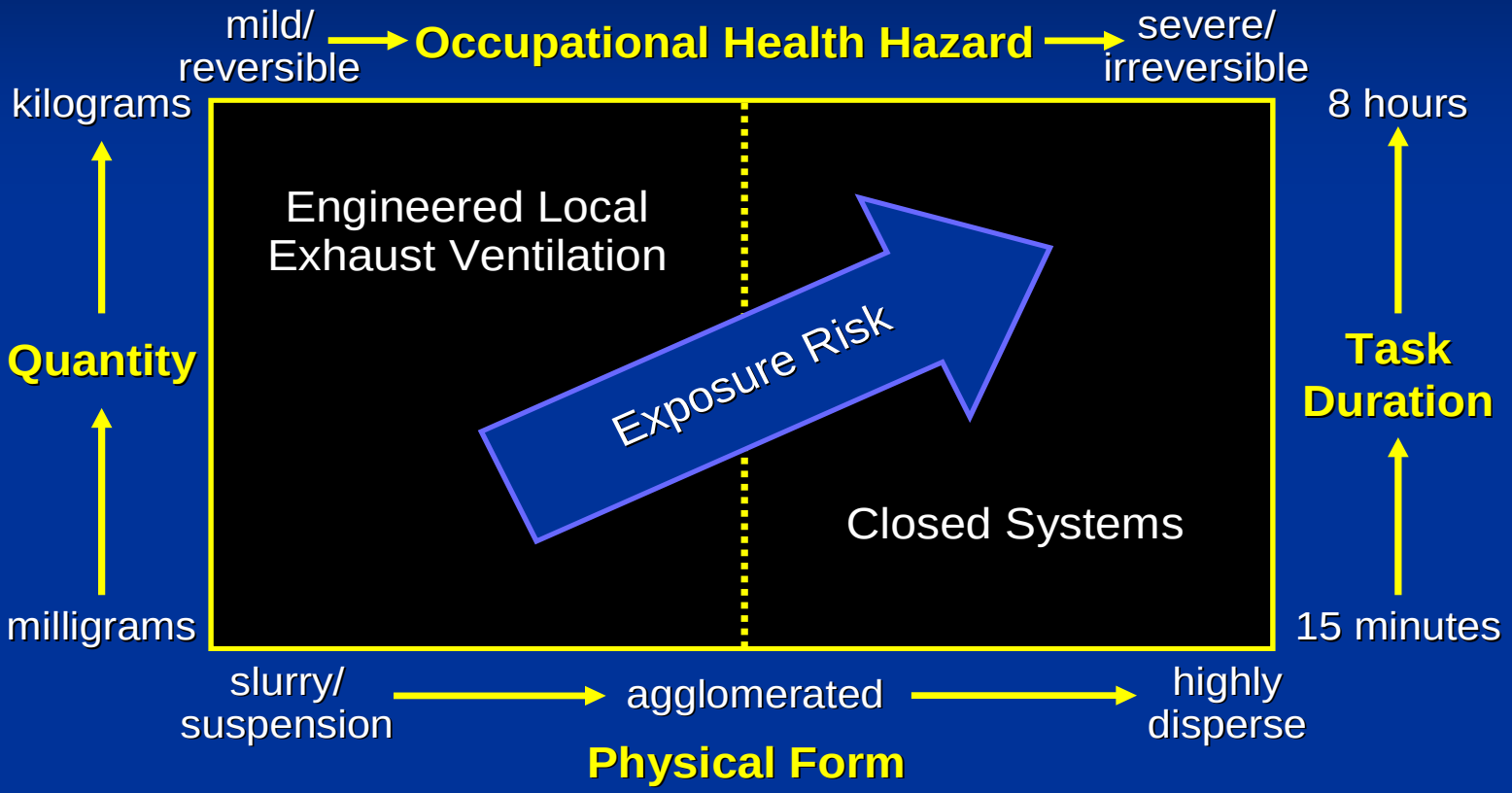
Workplace Health & Safety Risks

- Disease/Illness, Injury, Mortality / Fatality Risks
- Hazardous substances, Toxic materials, Biological Agents
- Unsafe working conditions
- Poor ergonomic working conditions
  - make the job fit the worker, instead of forcing the worker to conform to the job
- Organization of work and psychosocial strains
- Any combination – often all

Risk = Health Hazard + Exposure Potential

- Need to combine hazard and risk communication
- Qualitative Risk Assessment seeks to define
  - "Acceptable Risk"
- We must ask:
  - Acceptable to Whom?????
- Why is risk being communicated?
  - For workers' health and safety?
  - For employer compliance and liability prevention?

Factors Influencing Control Selection



Political and Economic Contexts of Knowing Risks?

- Risk communication is a first step
- Need training “in a manner that can be applied in workers’ daily work”
  - Literacy, Health Literacy, Language, Culture, etc.
- Right to Know – but what about Right to Act
- Do we provide training about how to engage in action to prevent morbidities and mortality?
- Are workers protected against discharge or other discrimination and retaliation by employer as a result of their taking protective action?

Sustainable Production

- Risk communication is often used to prevent unnecessary fear
- But – we may want to help ourselves understand appropriate fears
- Inform workers to support their participation in developing new modes of healthy, safe, and environmentally sound production

H&S and Political Action Training

- RTK training for migrant farm workers in NJ
  - about agricultural chemicals
- Training and support of H&S activists helped the farm workers to testify at the State House
  - Strong H&S measures to prevent work-related illnesses from agricultural chemical exposures.
- Others filed a lawsuit against an employer who fired them for filing complaints
- One employer was fined due to farm workers' H&S complaints
  - Weinger M, Lyons M. Problem-Solving in the Fields: An Action-Oriented Approach to Farmworker Education About Pesticides. *AJIM* 1992;22:677-690.

Workplace and Environment

- Environmentalists look at intrinsic properties and hazards of substances
  - May seek to ban or eliminate them
- Workers look to control and prevent exposures
- Need tools to support alternatives assessment across a product's lifespan
  - Permits looking UP and DOWN Stream
- Supports Workers Health and Safety, Environmental Justice and Protection

Green Chemistry Training
Review of History

- A pictorial timeline
  - The shift from bio/physical to synthetic chemical inputs
  - The trajectory of pollution, the environmental and health and safety movements, and public health regulation of industrial production
  - Seeing risk within their social, political, and economic contexts
    - Looking across social perspectives

Historical Events

1900 - 1949 | 1950 | 1960 | 1970 | 1980 | 1990 | 2000 | 2010

Great Depression
IMF, World Bank Created
World War II
"Cold War" and Anti-Communism
Korean War
Vietnam War
9/11 and "War on Terrorism"
Increasing Globalization
First Iraq War

Consequences of a Chemical Economy

First Case of Lung Disease Due to Asbestos
Chemical Industry in Rapid Development with Little Government Attention

Hole in the Ozone Layer
Bhopal, India (Gas Leak)
Copenhagen Climate Conference
Estimates of Global Warming
Kyoto Conference
Biomonitoring Finds Industrial Chemicals in Human Tissues
Libby, Montana (Asbestos)
Pesticide Markets Boom
Leaded gasoline in use
Computer Chip Invented

Woburn, MA (Water Contamination)
Times Beach, MO (Dioxin)
Hurricane Katrina
Love Canal, NY (Toxic Waste)

(US Chemical Production 1945-2005)

Legal & Political Events

EPA Green Chemistry Program
CAFTA
Safe Drinking Water Act
Pollution Prevention Act
Consumer Product Safety Act Amended
Clean Air Act
NAFTA
OSHA
Toxic Substances Control Act
EU Implements REACH
Clean Water Act
HSWA (Hazardous Waste)
FIFRA (Pesticides)
Clean Air Act Amended
NIOSH
RCRA (Hazardous Waste)
US Green Chemistry Bill
CERCLA
SARA: Right to Know & TRI Established
Supreme Court Overturns "Fetal Protection" Ruling

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Participants reflect on their own experiences within that timeline

- Two workers - printers for a major urban newspaper – talked about:
  - Using strong solvents to clean inks
  - Less toxic chemicals were used later
  - Bladder cancer cluster emerged later among those who worked with the original solvent
- They asked the question:
  - How do we know the consequences of working with a new substance?
  - How do we know that a new green chemical won't cause health problems later?

Research Needed

- How are communicated risks understood and used by workers:
  - To protect individual health and safety
  - To engage in building a health and safety movement
- What outcome measures will best inform us of successful risk communication to workers?
- Interventions where workers have a major role in developing effective risk communication programs.